7-1 PURPOSE: This chapter provides the Aviation rules of engagement for all rotary wing and fixed wing aircraft participating in operations conducted at JMRC in the HFCA and EDR-137.

7-2 GENERAL: Army aviation is a division / corps asset whose operations span the depth of the battlefield (Close, Deep & Rear) providing Combat, Combat Service and Combat Service Support to the ground commander. Its use must be within the division commander's intent. Aviation is a maneuver asset conducting Attack, Cavalry, and Air Assault mission in concert with the ground scheme of maneuver and must be coordinated and approved through the chain of command by EXCON.

7-3 AIRCRAFT IDENTIFICATION:

a. **AIRCRAFT MARKINGS**: All aircraft will be marked in white chalk with three foot high and two inch thick numbers. The identification code is the first letter of alphanumeric designator of the Company or Troop element (i.e.; **E** / 1-1 Cav) and the last two of the aircraft tail number (i.e.; 223**30**) result in the following aircraft ID Code – **E30**. For UH-1H / UH-60 / AH-64 aircraft, the numbers will be placed midway and on both sides of the tail boom. On the OH-58D, the numbers will be placed on the aft portion of the fuselage on the engine cowling and engine cowling doors. For CH-47 aircraft, the number will be placed midway between the nose and the cargo door. These chalk numbers will remain the same throughout the rotation. Exceptions are aircraft carrying general officers, MEDEVAC aircraft performing real-world evacuation missions, and aircraft providing direct support to aviation OCs (Augmentee aircraft). Falcon OCs provide chalk marking for unit aircraft provide chalk for marking the aircraft.

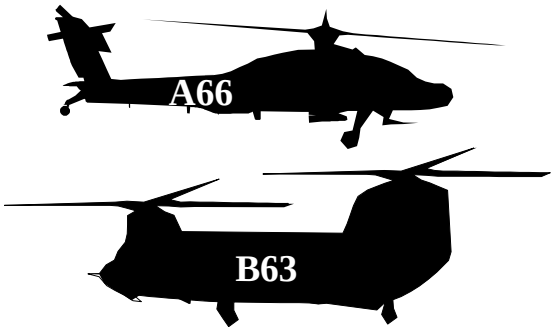

Figure 7-3 Aircraft Chalk Identification

b. **IFF / MODE 3/A**: All aircraft conducting operations within the JMRC HFCA will squawk Mode 3/A and Mode C, IAW A2P2 and USAREUR 95-1.

c. **EDR 137:** All aircraft operating in the EDR 137 will utilize the assigned codes IAW the Air Tasking Order (ATO), A2C2 Plan and unit TACSOP.

d. **OC AIRCRAFT:** All UH-1H helicopters are distinctively marked with yellow cockpit doors and yellow nose. On occasion, the OPFOR helicopters (desert camouflage UH-1H) will serve as OC aircraft and will display a distinctive yellow panel in the cabin window. Augmentee OC helicopters will display "OC" chalked on the sides and horizontal stabilator. Regardless of the helicopter used, OC helicopters will operate with position lights steady, anti-collision lights on at all times. OC aircraft will maintain lateral and vertical separation, weather permitting. OC aircraft will descend to terrain flight altitudes to conduct any needed manual adjudication of BLUFOR / OPFOR weapon engagements.

e. **OPFOR AIRCRAFT:** Desert camouflaged VIS-MOD UH-1H helicopters replicate MI-24 HIND-F aircraft. These aircraft conduct tactical missions at terrain flight altitudes without external aircraft lighting.

7-4 AVIATION MISSION PLANNING:

a. **INFORMATION TO OCs:** AVN TF, Battalion and company level units will provide Falcon OCs:

1. Consolidated Alpha Roster to include personnel information, vehicle bumper and aircraft tail numbers.
2. Aircraft manifests.
3. Two copies of orders, overlays, communication cards and kneeboard packets, and a copy of the mission's tactical and

environmental risk assessment for each mission signed by the unit commander. This information may be provided on diskette in PFPS 3.1.2 (Falcon VIEW) format if unit is so equipped.

b. **BRIEFINGS:** Rotational units must schedule a Redline/EXPRO/Safety brief with the Falcon OC Team prior to conducting operations within the EDR-137 / HFCA.

c. **FLIGHT WAIVERS:** Units must obtain approval for weekend and after-hour flights outside of EDR-137 through their chain of command IAW AP/2.

d. **AIRCRAFT COMMUNICATION REQUIREMENTS:** Units will only use authorized frequencies as assigned by JMRC S-6. (Aircraft, ground vehicles, man portable radios, etc). Airborne FM Frequency Hopping is allowed within EDR-137 IAW host nation restrictions. Aircraft must establish radio communications with a Falcon OC prior to mission execution. If utilizing HAVEQUICK, as approved by 5th Signal CMD, using authorized FMT sets 1-3, units will be prepared to provide TOD. If HAVEQUICK communications cannot be established with the OC, then single channel UHF communications will be maintained.

e. **IFF:** Standard request procedures for IFF apply. JMRC will request approval for ADA and AVN units to use IFF frequencies for rotations through the USAREUR Frequency Management Office (FMO). Units need to bring their IFF fills from home station.

f. **Load Replication:** All ammunition, cargo, passengers and sling loads are treated as having real weights. Weight and balance records and fuel loads must correspond as appropriate. Aircraft configuration must correspond with the planned aircraft load and the equipment must be operational. Crews will provide a copy of the Sling Load work sheets to the Falcon OCs prior to lifting a sling load.

g. **SIMULATED REARMING:** When simulating rearming operations, the required equipment and specific number and type of personnel (e.g. 55B, 92F, 15F) required for the operation must be present. The minimum time for rearming aircraft is 20 minutes per aircraft per pad.

h. **NVD OPERATIONS:** See Chapter 11, Safety, the JMRC HFCA SOP and the HAAF SOP.

i. **LIGHTING AND BLACK OUT OPERATIONS:**

1. Flight operations conducted with no visible external lighting must be approved through the Senior Aviation OC. The intent to conduct Black Out Operations must be addressed in unit JMRC training objectives submitted to the Falcon Detachment.

2. Requests for black out operations must be received by HICON / EXCON NLT 24 hours prior to execution. Falcon 07 is the approval authority. Minimum lighting is as follows:

- AH-64: Position lights dim
- OH-58D: NVG Position Lights – Position Three
- UH-60: IR Position Lights Dim
- CH-47: NVG Position Lights – position Three

Any lighting less than the above requires a request for blackout operations.

3. JVB / VIP Aircraft. Operate under full lighting and must coordinate through EXCON and the Falcon Detachment IOT ensure A2C2 deconfliction.

j. **COMMAND AND CONTROL:** BLUFOR units must adhere to the graphic control measures and A2C2 structure IAW the JMRC A2C2 SOP, Aviation Procedures Guide (published for MRXs), Airspace Control Order (ACO), overlays, and orders issued by HICON.

k. **Out Of Sector Flight:** Aircraft flying out of designated maneuver boundaries or over flying noise avoidance / posted no fly areas are subject to OC manual adjudication. This will result in the aircraft receiving battle damage and resulting in the execution of a forced landing IAW the Falcon OC instructions. The aircrews will receive specific instructions pertaining to the level / degree aircraft damage and personnel injury.

l. **Personnel:** Units will ensure one seat per UH-60 aircraft and three seats per CH-47 aircraft are available for OCs. OCs will fill aircraft seats based on mission requirements. No BLUFOR personnel will leave the LZ without an OC moving with their element.

7-5 AVIATION MILES/SMODIMS:

a. **REFERENCE:** Refer to Chapter 2, Maneuver for additional information.

b. **REQUIREMENTS:** All aircraft supporting rotation tactical missions will have a SMODIM installed and functioning. All MILES capable aircraft will have functioning MILES to fly on missions in the EDR. Exceptions are aircraft carrying general officers and MEDEVAC aircraft performing real-world evacuations. Aircraft experiencing MILES malfunctions should immediately contact the OC. Units are responsible for coordinating MILES contact

support through the MILES warehouse; the FALCON OC team can facilitate this.

c. **MAN WORN LASER DETECTOR (MWLD):** All personnel, to include contract maintenance personnel, will wear MWLD. Exceptions are as follows:

1. Personnel performing crew duties (flying) or performing maintenance on aircraft (inside the rotor disk) may temporarily remove their MWLD, Kevlar and LBE in order to reduce the risk of FOD and personal injury while conducting aircraft maintenance. Personnel inside the rotor disk not conducting maintenance or performing crew duties will be assessed as an EXPRO violation / non-battle casualty.

2. Personnel performing refuel and rearm of aircraft will temporarily remove their MWLD in order to reduce the risk of personal injury or potential FOD damage to the aircraft.

7-6 ARMY AIRSPACE COMMAND AND CONTROL:

a. **GENERAL:** Army Airspace Command and Control (A^2C^2) consist of those actions that ensure the synchronized use of airspace and enhance the command and control of those forces using airspace. The A^2C^2 system includes those organizations, personnel, facilities, and procedures required to perform the airspace control function.

b. **REFERENCES:** JMRC A2C2 SOP; Annex A, Hohenfels Army Airfield Procedures, Annex B, Aviation Procedures Guide (Redline Brief), Annex C, JMRC HFCA SOP, and Airspace Tasking Order (ATO) the Airspace Control Order (ACO). EXCON is the approval authority for use of EDR-137. The Commander of HAAF is the approval authority for the use of the JMRC HFCA. Maneuver units are not authorized use of the Hohenfels Army Airfield.

c. The maneuver brigade commander will manage the airspace over his area of responsibility through his staff and through liaison officers (LNOs) from the Air Force, Army, ADA, and Army aviation.

d. **A2C2 PLAN:** The DIV G3 Air and/or BDE S3, in coordination with EXCON, will develop the A2C2 plan. NLT D+1, The Aviation BN LNO and/or BDE/BN S3 will provide copies of the airspace management plan (annex, execution matrix and overlays) to HICON and the Falcon OC Team.

e. **ATO/ACO:** Division Air Element (DAE) in coordination with EXCON will publish the ATO/ACO and push it to the BDE S3 Air. The BDE A2C2 element will forward Airspace Control Requests for airspace control measures to HICON / EXCON. Aircraft will comply with all graphic control measures, to include brigade/task force boundaries, and airspace specifics outlined in the rotation ACO and Special Instructions (SPINS). Changes to the airspace structure will be published in the daily SPINS and updated in the ACO if they will affect the duration of the rotation.

f. **DAILY RANGE BULLETIN:** The daily range bulletin will be included by the DAE in the daily ATO/SPINS. Aircrews must review the daily range bulletin for restrictions prior to flight. **THIS REPRESENTS A REAL WORLD HAZARDS TO FLIGHT.**

g. **COORDINATING ALTITUDE:** Unless designated differently in the ACO, coordinating altitudes are as follows: RW (Day/ Night) 100'AGL & below. FW (D) 250'AGL & above. FW (N) 500'AGL & above. Any deviation of the coordinating altitude must be coordinated through and approved by EXCON. Falcon OCs may disapprove the request due to hazards associated with weather and Airspace deconfliction.

h. **FLIGHT ROUTES**: The flight route (ingress and egress) and landing zone (LZ) for aircraft must be within rotational unit sector. All route changes / deviations must be approved by HICON.

7-7 GROUND TO AIR ENGAGEMENTS (HELICOPTER): Aircraft are subject to two types of ground to air assessment; MILES on MILES and subjective assessment.

a. **MILES EQUIPPED AIRCRAFT:** For aircraft fully equipped with MILES, assessments will be made based primarily on the MILES system utilizing aircraft kill codes. MILES rules the battlefield. OCs will assess aircraft BDA cards IOT determine the amount of damage to the aircraft and the extent of personnel injuries.

b. OCs will subjectively assess damage to aircraft that receive MILES near misses; or that in the opinion of the OC received the quality and quantity of small arms fire to warrant assessment of damage.

c. **NON-MILES EQUIPPED AIRCRAFT:** For Aircraft not fully equipped with MILES (i.e. AH-64A / OH-58D), the primary means of assessment is subjective based on observations made by Falcon OCs. This includes the subjective assessment of aircraft damage and personnel injuries IAW SBDA packet and

personnel MCC. This does not reduce the requirement for operational MILES on all aircraft.

d. OCs can contact the Falcon OC through EXCON / Falcon TANGO when they observe ground fires engage BLUFOR aircraft. The ground OC and Falcon OC will discuss the range to the aircraft, aircraft actions (i.e. hovering or moving, masked or unmasked), and the type and number of rounds fired at the aircraft IOT make the appropriate and timely adjudication.

e. The final damage assessment will be assessed by the Falcon OC and will be relayed to the ground OC through Falcon Tango / EXCON.

f. **MILES ASSESSED BDA AND EXCEPTIONS:** SAWE/MILES will determine the outcome of all engagements. The following are exceptions to this rule and will be controlled/adjudicated by OC's:

1. Indirect fire.
2. TACAIR.
3. NBC
4. Direct fire engagements for non-MILESed aircraft to include air to ground / ground to air engagements.

g. **SBDA:**

1. In the event of successful engagement indicated by a MILES CVKI light illumination, steady audio tone in the aircrew headsets, or OC adjudicated SBDA, the aircraft will land at the nearest suitable landing area. The crew is permitted one "mayday" call. Crews are reminded to add the word "simulated" during this radio call. Crews and passengers (unless accompanied by an OC) must stay with the aircraft until met on the ground by an OC. Crews will then activate their SBDA packets and MCCs and follow the directions of the OC. Aircraft passengers will activate MCC and may dismount, cross-level, and continue the mission IAW MCC and the OC's approval.

2. In the event of a MILES or OC adjudicated catastrophic kill, the aircraft will land at the nearest suitable landing area. All crew and passengers are considered KIA and will self-kill their MWLD (insert and turn the yellow key). All equipment and cargo are considered non-operational. An OC may direct destroyed aircraft to return to the AA due to weather or crew day considerations.

h. **DOWNED AIRCRAFT SEARCHES:** OPFOR personnel may board damaged aircraft under the supervision of the administrative KIA crewmember and an OC. Aircraft that don't have a "Destroyed" BDA card are liable to search for 1 hour upon initiation of the search. OPFOR can search A/C for tactical intel, with the supervision of the PIC, to ensure safety of both the searcher and the aircraft. If a search has not been initiated at 1 hour after set down, the Aviation OC will mark the aircraft with red tape. After this there is no opportunity to search the aircraft. Personnel searches of passengers and crew may be conducted IAW CHP 3 under the supervision of an OC.

i. **MULTI SHIP FORMATION FLIGHTS:** During NVG multi-ship formation flight, aircraft which have a MILES kill light illuminate or steady audio tone come on, shall continue the flight with his MILES kill light on until EOM or upon landing at the next PZ/LZ, whichever occurs first. No one will depart or board the engaged aircraft until an OC arrives. The on-site AVN OC will assess the aircraft at the landing site.

j. **AIRCRAFT RECOVERY:** Downed aircraft recovery team (DART) and the Pre-Accident Plan may be exercised in the event of MILES SBDA or OC adjudicated SBDA. The OC will notify the downed crew if DART is activated. Any maintenance or recovery team is subject to OPFOR engagement and must be equipped with MWLD. No actual "wrench turning" will occur for SBDA. However, the DART must consist of the appropriate manuals, forms, tools, equipment and personnel. Aircraft are considered fully mission capable when the appropriate DART has simulated fixing the aircraft or prepared the aircraft for recovery. Aviation OCs on the ground will determine when "simulated" damaged aircraft and aircrew members will depart for the Assembly Area (AA) or continue the mission. OCs are the final release authority.

1. Time and assets required to simulate repair of MILES and non-MILES damaged equipment will be "real world", IAW the Maintenance Allocation Chart.

2. The training unit will tactically recover all BLUFOR damaged aircraft.

3. After the unit tactically evacuates all casualties and KIAs from a destroyed aircraft, the unit will coordinate the administrative movement of that aircraft with an OC. If the unit fails to coordinate the recovery, crews and aircraft are subject to tactical play.

4. Destroyed aircraft or ground equipment item will remain destroyed after change of mission (COM) instructions for the Aviation Unit until the proper personnel and supply replacement procedures have been completed and valid document numbers have

been received issuing replacement equipment. If the aircraft or equipment were destroyed prior to LD the equipment will not be reconstituted until five hours after the higher S4 receives the appropriate replacement requisitions, and a valid document number has been issued. From LD-5 through COM the unit can initiate the replacement requests but equipment will not be reconstituted until COM instructions are received and the appropriate supply procedures have been completed. Repair times for damaged aircraft are IAW the applicable maintenance allocation chart. While in a destroyed status aircraft and equipment can have real world maintenance performed.

k. **ESCAPE AND RECOVERY:** Units must coordinate with the Falcon OC Team and indicate in the training letter the desire to conduct personnel recovery training. No crewmember or passenger is permitted to execute escape and recovery without prior coordination and direct OC supervision. Self-extraction of aircrew members is specifically prohibited. Aircrew members must wear all elements of the MWLD and execute the escape and evasion plan IAW Unit TACSOP.

7-8 AVIATION CONSIDERATIONS FOR NBC (HELICOPTER):

a. **MOPP:** Aircrews will have the requisite NBC equipment and will be in the prescribed MOPP level for both flying and non-flying duties. This includes proper use of M 8 for aircrew members and M9 paper for aircraft and vehicles IAW unit TACSOP. There is no simulation of MOPP levels.

b. **CHEMICAL EFFECTS:** All helicopters, their crews, and passengers are susceptible to chemical hazards. Each aircraft will have a designated safety pilot who will not wear a mask. The other crewmembers and all passengers will adhere to the prescribed MOPP level.

c. Aviation OCs will determine the level of contamination of personnel and equipment. Effects of persistent agents will remain IAW the COM instructions issued by EXCON.

d. If, due to physiological, psychological, or environmental effects, a crew cannot adhere to the prescribed MOPP level and conduct operations safely they will remove themselves from the situation.

7-9 AIR TO GROUND ENGAGEMENTS (HELICOPTER): Assessments will be made by MILES on MILES engagements and subjective calls based on OC observations.

a. Aircraft fully equipped with operational MILES engagement systems; the primary means of assessment will be laser kill codes for ground targets. MILES rules the battlefield.

b. Aircraft not equipped with a MILES engagement system (i.e. AH-64A, OH-58D KW anti personnel and anti tank missiles) requires the Falcon OC to physically engage the targets with the "controller gun" or contact ground OCs for manual adjudication for each engagement.

c. Prior to the engagement the BLUFOR aircraft must transmit an effective target handover to the OC. The handover must include the description of the target being engaged (type and number), distance and heading, and number/type rounds used to engage. The Falcon OC will provide feedback on the effects of the engagement.

d. **HELLFIRE:**

1. Personnel operating remote HELLFIRE laser designators will adhere to the safety fan as outlined in FM 3-90.32.

2. Laser designators must have positive communications with the firing unit on an OC monitored net.

7-10 AIR-TO-AIR ENGAGEMENTS (HELICOPTER): Air to air maneuvering is prohibited. Air to air maneuvering is defined as changing the heading, altitude or attitude of the aircraft in order to engage an aircraft. Re-orientation of a weapons system, e.g., 30 mm or M60D machine gun, is permitted.

7-11 AIR DELIVERED VOLCANO (HELICOPTER):

a. **GENERAL:** Air delivered VOLCANO minefields have only four-hour or 48-hour duration. The Division Operation Order determines the allocation for each VOLCANO system. The minimum length of an air delivered VOLCANO minefield is 200 meters (SAWE/MILES II supported).

b. **EQUIPMENT AND OPERATIONAL PLANNING REQUIREMENTS:**

1. All components of the VOLCANO system must be on hand and operational to emplace a minefield.

2. With an aviation OC present and observing, the unit must turn the system on, and fly the center line(s) of the minefield IAW the procedures outlined in FM 20-32.

3. Flashing the aircraft landing lights will indicate start point and end point of the minefield and provide the signature for employment of the system. The aircraft must call the Aviation OC at the start and stop point of the minefield.

4. There is no requirement for the VOLCANO system to actually launch training mines.

5. Aircraft will rearm in accordance with proper procedures and manuals. If no M89 rounds are available for training, then FARP personnel will provide forms (DA 581) indicating status of ammunition and aircraft will remain at the FARP/AA for minimum of 30 minutes.

6. Emplacement of the minefield and marking will be IAW CHP 5 of this EXPRO.

7-12 DAMAGED/DESTROYED AIRCRAFT WHILE ON THE GROUND:

a. Aircraft engaged by direct / indirect / demolition effects on the aircraft result in a manual damage assessment.

b. The Falcon OC marks damaged aircraft with fluorescent yellow tape.

c. Aircraft destroyed are marked with fluorescent orange tape.

d. Reconstitution will be IAW para 7-7, j.(4):

7-13 SIMULATED EMERGENCY / PRECAUTIONARY LANDINGS:

a. The aircrew will contact the Falcon OC immediately after illumination of the MILES kill light / steady audio tone is heard in the headset or when notified by a flying OC.

b. The aircrew will land at the nearest safe landing area. The Falcon OC will direct the procedures of the aircrew; i.e. – transmit one abbreviated MAYDAY call, aircraft shutdown or reposition IAW instructions from the Falcon OC.

c. Falcon OC will assess the aircraft and crewmembers/passengers after landing IAW MCC.

d. The Pilot-in-Command will remain with the downed helicopter as an administrative KIA. The remainder of the crew is subject to tactical play. Surviving aircrew and passengers (unless accompanied by an OC) must remain in the immediate vicinity of the aircraft until released by a Falcon OC.

e. NVG / Multi-ship formation flight. Aircraft with a MILES kill light illuminating or steady audio tone come on, shall continue the flight with his MILES kill light until arriving at the planned LZ. No personnel will exit / enter the aircraft.

f. The PIC and senior ranking BLUFOR are responsible for adherence to this restriction until an OC arrives to adjudicate. The on-site Falcon OC will assess the aircraft at the landing site.

h. Falcon OCs are the only authority for moving downed aircraft.

7-14 AIRCRAFT SURVIVABILITY EQUIPMENT (ASE):

a. Aircraft operating at JMRC will load the correct operational APR-39 Mission Data Set (MDS). The correct set is obtained from the Multi-Service Electronic Warfare Data Distribution System (MSEWDDS).

b. Units bringing an ALQ-144 Jam program table and demonstrating knowledge of classified acquisition ranges of infra-red threat systems on aircraft equipped with an operational AN/ALQ-144 or AN/ALQ-156 will be afforded protection from the SA weapon system IAW its operational capability. Otherwise, MILES rules the battlefield.

c. Units may not use chaff at JMRC. Units will show DA 581 demonstrating requisition and delivery of chaff, in order to receive the survivability enhancement that chaff affords.

d. The aircrew will land their aircraft as a result of the illumination of the MILES-kill light or steady audio tone and immediately notify the on-site Falcon OC that they have a kill light illuminated. The on-site AVN OC will manually adjudicate the aircraft / aircrew and determine BDA effects.

e. Aircraft equipped with the AN/ALQ-136 Radar Jammer will not conduct jamming operations at JMRC.

7-15 ASET IV: Air Defense System engagements against non-MILES equipped aircraft, including IR / AAA and RF SAM are adjudicated through coordination from the ASET IV operator or Warrior Tango contacting the Falcon OC through EXCON / Falcon TANGO Net.

7-16. MEDEVAC OPERATIONS: MEDEVAC OCs will deploy to JMRC with aircraft and a full flight crew. In the event MEDEVAC aircraft are unable to deploy to JMRC then the following applies with respect to covering MEDEVAC missions:

a. MEDEVAC augmentee OCs will provide coverage. They will be aviators in the rank of CW3 or above.

b. MEDEVAC OCs will operate from the back seat of the rotational unit aircraft.

c. The rotational MEDEVAC unit will provide the OC with access to the intercom system.

d. The rotational MEDEVAC unit will provide the OC with one FM radio on the Falcon command FM net for communications between the MEDEVAC OC and the Falcon OC team. This does not replace the requirement for the aircraft to flight follow with Hohenfels Tower or Advisory.

e. The MEDEVAC crew will operate their aircraft with the Falcon frequency ICS pin switch in the off position.

7-17 SAFETY:

a. **REFERENCE:** Aircraft operating at JMRC will do so IAW the JMRC A2C2 SOP, Annexes A, B, and C, Aviation Procedures Guide, and USAREUR Supplement 1 to AR 95-1 (includes operations using NVGs). The unit must also possess a current and updated hazards map of the HFCA / EDR-137 IOT safely conduct flight operations. Refer to Chapter 11, Safety for additional information.

b. **APPROACHING AIRCRAFT: CAUTION:** Tail rotors and drooping or low main rotor blades due to aircraft start-up, coast down or cross slope landings present hazards to ground personnel. Soldiers must gain the attention of the pilots or crew chief before approaching the aircraft. Soldiers will approach UH-60/UH-1 aircraft from a 45-90 degree angle after gaining attention **and acknowledgement** from an aircrew member. Soldiers will approach CH-47 aircraft from a 180 degree angle (the tail of the aircraft) after gaining attention **and acknowledgement** from an aircrew member.

c. **PYROTECHNICS:** Units will not throw pyrotechnics from an aircraft nor will any unit fire Star Clusters, simulated air bursts or simulated air defense weapons systems directly at aircraft.

d. **AIRCRAFT LANDING:** If helicopters are required to land during tactical operations, i.e., to check a kill code, simulate battlefield debris, etc., do so in an area that will not interfere with ground vehicle maneuvering.

e. **AIRCRAFT SEPARATION:** Aircraft will not approach, dust, or land within 100 meters of Soldiers or vehicles except on designated PZs.

f. **HOVERING:** Aircraft will not use hovering techniques to intentionally stir up dust or debris when conducting aerial searches for opposing ground forces.

g**. AIR ASSAULT AND AIR MOVEMENT OPERATIONS:** Soldiers being transported and aircrews must be trained in conducting air assault/movement operations. Requests and approval for aircraft "seats out" operations will be IAW Army Regulation 95-1 and USAREUR Supplement to 95-1.

h. **ACCIDENTS OR MISHAPS:** Units are responsible for the security and investigation of actual ground or aviation mishaps IAW AR 385-95 and AR 385-40. Units may request assistance from Falcon OC Team and JMRC. Units must immediately notify the Senior Aviation OC in the event of mishap. Courtesy copies of accident reports and the logs will be turned into the Falcon Safety OC.

i. **MISSION PROFILE CHANGES:** The Falcon OCs can direct changes to the mission profile, e.g. lights, routes and altitude, IOT ensure the safety of the BLUFOR / OPFOR aircrews. This applies to all aircraft conducting operations with the JMRC HFCA and EDR-137.

j. **JMRC MEDEVAC** aircrews must conduct coordination with Falcon OPs prior to conducting flight training within the JMRC HFC or EDR-137. Fire and emergency services will be given a copy of BLUFOR airfield parking plan to include designated parking rows and FARP diagram. (Note: units will often designate their own parking rows A-B-C in any combination and not pass this to the fire station so when something happens the unit calls an emergency "a/c fire in parking at row B2" and the fire station has no idea where this is because it changes every rotation).

k. **TACTICAL PRE-ACCIDENT PLAN:** A Tactical Pre-Accident Plan will be developed and rehearsed prior to D+1.

l. **SURVEYS:** Assembly Area (AA) surveys will be conducted within 24 hours of occupation or as per unit SOP, whichever is earlier.

m. **MEDEVAC:** In the event of real world aerial MEDEVAC operations, the HAAF tower and / or Falcon OCs will notify BLUFOR Aircraft of impending MEDEVAC aircraft in the EDR-137 / HFCA. RW aircraft will cease activities and hold their position on the ground until released by HAAF Tower or Falcon OCs.

7-18 OPFOR AVIATION OPERATIONS (HELICOPTER):

a. **OPFOR Aircraft:** Desert camouflaged VIS-MOD UH-1H helicopters.

b. **MILES:** SAWE/MILES will determine the outcome of all engagements. The VISMOD UH-1 has a MILES sensor array that replicates the armor plating of a MI-24 HIND-F.

c. **AIRCRAFT RECONSTITUTION:** If a OPFOR Aircraft is killed it will transition from terrain flight altitude, turn on its anti-collision light and positions lights, climb to altitude (normally 2500 feet AGL), proceed to the designated checkpoint or boundary and reset its MILES IAW the number of lives approved for that mission. Destroyed aircraft will wait 20 minutes prior to reentering the box. If the aircraft is conducting an air assault or air movement mission and the troop carrying aircraft is assessed as a MILES kill on ingress or in the vicinity of the LZ, it will remain with that lift but will not be authorized to offload its troops. Once the lift returns to the PZ the aircraft may be reconstituted and used again if authorized in the Combat Instructions. However, the troops and equipment cannot be reinserted on a follow on lift.

7-19 TACAIR:

a**. DESIGNATING AIRCRAFT:** Red and Blue TACAIR are designated prior to each rotation. TACAIR supporting the OPFOR will use NATO tactics and simulate NATO munitions. When notional CAS is authorized by the COG for pre-planned or immediate CAS requests, quality of TACAIR planning will also be taken into account for execution of TACAIR and BDA

b. **COMMAND AND CONTROL:** All aircraft will operate under the control of the BULLSEYE OC Team and EXCON, who will provide the necessary coordination with HAAF and the EXCON. Aircraft will obtain clearance from the BULLSEYE OC Team upon entering and departing the maneuver area complex. The Commander, Operations Group, EXCON and the Team Chief, BULLSEYE OC Team, are the only individuals authorized to direct aircraft to depart the battlefield area.

c. **RESTRICTIONS:** Only one force's TACAIR (i.e., *only* BLUE or *only* RED aircraft) will operate in a given exercise air corridor at any one time. Simultaneous attacks by both BLUE in separate air corridors are not permitted only when specifically authorized by the BULLSEYE OC Team.

d. **COORDINATING ALTITUDE:** **C**oordination altitude is IAW JMRC Aviation/Airspace Procedure Guide.

e. **AIR TO AIR ENGAGEMENTS:** Air-to-air engagements between opposing TACAIR forces are not authorized in JMRC airspace.

f. **SEAD MISSION:** In order to maintain the highest possible Pk table, unit should support all TACAIR (CAS) missions with target SEAD. TACAIR may execute Suppression of Enemy Air Defense (SEAD) missions by specifically pre-designating the target description and location to the AFOC and making the appropriate air-to-ground attack.

g. **BLUFOR CONTROL OF AIRCRAFT:** Aircraft operate under the control of the rotational ALO, or qualified ETAC, Airborne Forward Air Controller (AFAC) or Army Aviation Commander. The BULLSEYE OC Team and EXCON maintain overall control of aircraft operating in the Maneuver area complex. For both Live and Notional TACAIR (CAS) missions, an OC must be present to verify the observer can positively identify the target during all engagements.

h. **KEY LEADERS:** The training unit Task Force ALO/ETAC is considered as "Key Leaders" and follows EXPRO pertaining to Key Personnel. When an ALO/ETAC is assessed as a casualty for a second time, the ALO/ETAC may not control the CAS mission. ALO/ETAC vehicles assessed as casualties are considered mobility kills. The vehicle may not move, but all radios remain operational. When the ALO is assessed as a casualty, an Enlisted Tactical Air Controller (ETAC) will become the primary control source. When neither the ALO or ETAC is available and an AFAC or Army Aviation Commander is not in position to assume control, responsibility, in order of preference, will fall to (1) Tactical Air Control Center (TACC) personnel not ETAC qualified, (2) FIST/FSO, or (3) an individual designated by the ground commander. In instances other than ALO control, the ALO still exercises a supervisory role for control/safety of aircraft.

i. **SAFETY:** The ALO, when in a supervisory role, will advise the attacking aircraft only of flight safety considerations. He must have immediate access to an operational radio to abort the mission, if required. The ALO or BULLSEYE OC will resume control anytime the safety of air or ground elements becomes a factor.

j. **ADDITIONAL INFORMATION:** Additional information for TACAIR is provided in JMRC Air Procedures Guide (APG).

k. **AIR TO GROUND ENGAGEMENTS (FIXED WING):**

(1) BLUE and RED air engagements are evaluated by the BULLSEYE OC for the appropriate aircraft and ammunition. When the aircraft is equipped with Laser Engagement Simulators (LES).

(2) The BULLSEYE OC monitors the Tactical Air Control Net (TACN) to determine the target description, location, ammunition, and if standoff munitions are used. The BULLSEYE OC Team adjudicates the mission by pass in accordance with pre-approved assessment table..

(3) Firemarkers or OCs designate where aircraft are attacking by eight throwing hand grenade simulators to indicate aircraft ordnance. If standoff munitions are used, the OCs will simulate the weapons effect, even if aircraft are not visible (IR Maverick valid standoff employment range may exceed 7 km). Aircraft release flares and chaff for defensive purposes only. These releases do not replicate munitions.

(4) Prior to the execution of TACAIR (actual or notional), the COG will establish the number of pre-planned and immediate CAS missions prior to the rotation and the High or Low Pk assessment table prior to each engagement.

(5) The BULLSEYE OC determines the quality of attack for each aircraft type and ammunition used, and assigns a high or low probability of BDA based on factors including visibility, ceiling, and/or threat level. Errors in CAS procedures will always result in a 0% probability rate. Bullseye adjudicates the mission by pass accordance with a set high or low Pk table. Probability of Kill (PK) or damage factors include: Weather (ceiling and visibility), threat (acquisition, control, and range), target acquisition (camouflage, motion, obstructions, TDA, marking (laser, IR pointer, WP/HE/Illum round)), and aircraft acquisition systems (IR, visual identification, controller talk-on).

(a) High PK is a combination of these factors that allow the pilot to acquire and deliver ordinance on target while minimizing exposure to the threat.

(b) Low PK is a combination of these factors that make it difficult for the pilot to acquire and deliver ordinance on target without exposing the aircraft to the threat.

(6) Bombs and CBUs. Aircraft must make a "wings level" pass over the general area. Attacking aircraft can deliver weapons from high/low angle or level flight. Loft deliveries must be announced prior to pass. Release altitude for ordnance is at or above 500 FT AGL for arming requirements of most ordnance.

(a) Pilots must make number of bombs call before attacking on each pass. Otherwise, it is assumed all bombs were dropped on the first pass.

(7) Forward firing Ordnance (FIXED WING):

(a) Strafe: Aircraft is required to have its nose pointed at the target for a minimum of three seconds and within slant range. Strafing can be made while banking, turning, or from high or low angles. One Hundred rounds is the standard for strafe.

(b) Maverick Missiles: The aircraft is required to point its nose at the target for a minimum of three seconds and within slant range. The pilot must make a "lock and launch" or "rifle" call.

(8) Each aircraft is considered a separate pass.

(9) Aircraft Munitions Replication (FIXED WINGED):

(a) Bombs and Maverick missiles: Bombs and Maverick missiles are replicated by two ground bursts each pass regardless of number of bombs dropped.

(b) Strafe: A strafe will be replicated by one ground burst per pass.

(c) Secondary explosions: OCs will replicate secondary explosions as required.

l. **Notional CAS Procedures.** Before the engagement/air window, Bullseye will approve adjudication based on pre-approved guidance from the COG and will inform Spielmeister of targets and numbers for adjudication. Bullseye on scene OC will adjudicate mission via the supporting TAF. Bullseye and or Spielmeister will update COG with BDA assessed.

m. **GROUND TO AIR ENGAGEMENTS (FIXED WING):** See also Chapter 6, Air Defense. OPFOR ADA assets will be credited with a shoot down of notional air under the following conditions:

(1) OPFOR ADA assets are not suppressed and are in range to kill notional A/C.

(2) Notional A/C fly into artillery due to lack of coordination from TACP/ALO.

(3) If the TACP/TOC target is and OPFOR ADA asset, the above does not apply unless another asset is in range of engaging A/C; however, the OPFOR will be credited with a shoot down if the TACP recommends poor tactics and/or the A/C does not have SEAD or standoff capability.

7-20 SIMULATED UAV SYSTEMS GENERAL: Mission length of each intelligence asset will be calculated from take-off of that asset each day. Flights will be conducted IAW the Division Collection Plan and Intelligence Synchronization Matrix. Sortie requests for Simulated UAV and Echelon Above Brigade Assets will be submitted to HICON G2 at least 72 hours prior to execution. Mission target requests will be submitted NLT 24 hours prior to execution.

a. **MISSION LENGTH:** For planning and execution of Simulated UAV flights the following timelines will be used:

1.**TUAV:** Each TUAV is capable of 5 hours of continuous flight to include ascent and decent from the mission altitude, maximum 4 hours time on station at a range of 50 km. Twelve hours of coverage (3 sorties) is authorized for each 24-hour period without penalty. The TUAV can surge up to 18 hours (4 sorties) for three consecutive days. Following a one day surge, the TUAV will be available for 12 hours (3 sorties) of the flight following eight hours of maintenance. Following a two day surge, the AV will be available for 8 hours (2 sorties) of flight following 12 hours of maintenance. Following a three-day surge, the AV will be down 24 hours for system maintenance and re-establishing crew cycles.

2. **HUNTER:** Each UAV is capable of 8 hours of continuous flight to include ascent and decent from the mission altitude. (Current Hunter CONOPS provides for 24 hours of coverage, 3 sorties, per 24-hour period, continuously. Surge is defined as 36 hours of coverage per 24-hour period [multiple ship operations] for 72 hours. At the end of the surge period the unit requires 24 hours down-time for system maintenance and re-establishing crew cycles.) As Hunter is a V Corps asset with a focus of 72 hours and 300k forward of the FLOT, Bde units can expect to receive support on the way to and from the Corps target areas. Bde's that are replicating the main effort of the Division that is the Corps main effort can request up to one hour of support for every eight hours of mission support. Bde units that are not Divisional main effort units can request up to twenty minutes of support per eight hours.

b. **DYNAMIC RETASKING:** A rotational unit's immediate request for Division UAV support will be approved by S03 and the Commander of Operations Group on a case by case basis.

c. **ASSET BASELINES:** For planning and execution of UAV flights the following baselines will be used:

1. TUAV. 3/1
2. HUNTER. 8/0

d. **A2C2:** In order to ensure Division Airspace is maintained IAW procedural requirements, any airspace control measures not covered in the base Airspace Coordination Order (ACO) will be forwarded to HICON G2/G3 Air with the initial sortie request.

1. **TUAV:** The Brigade TUAV will fly between 3,000 and 3,500 feet AGL.
2. **HUNTER:** The Corps UAV will fly between 4,000 and 4,500 feet AGL.

e. **CONTROLLED RESPUPPLY RATES:** UAV's destroyed by enemy ADA, crashing due to lack of fuel, or lost due to weather will be resupplied at the rate of 1 AV every 48 hours. Damaged or destroyed UAVs will shut down the video feed immediately and return to the L/R ROZ. The commander may request the launch of the back-up UAV to complete the interrupted sortie. A 30-minute video interruption for a TUAV mission and a 60-minute video interruption for a Hunter mission will replicate the time to launch and return to station. The back-up UAV will land at the scheduled time of the interrupted sortie. All supply requests must be completed IAW EXPRO/RID to ensure timely resupply.

f. **WEATHER LIMITATIONS:** No UAV will be launched when sustained winds aloft exceed 50 knots. No TUAV will be launched if surface winds exceed 20 knots of headwind or crosswind. No Hunter UAV will launch if surface winds exceed 35 knots headwind or 25 knots crosswind. All UAVs require Visual Meteorological Conditions (VMC). Flight into moderate turbulence or known icing conditions is prohibited. UAV's will return to the Launch and Recovery Site, if Weather Advisories are received that would ground Army Aviation Assets, if icing conditions are encountered, or if ceiling levels descend below UAV operating altitudes.

g. **LAUNCH AND RECOVERY:** If there is a launch and recovery site within the rotational units AO, it must be secured in order to fly a UAV. In addition, all A2C2 and ATC procedural requirements must be in place prior to launch. At the time of launch, OCs will race their HMMWV engines at a moderate level for the period of two minutes. Virtual UAV Procedural Controls will be followed as outlined below in Paragraph 2.

h. **SET UP AND TEAR DOWN:** For planning and execution of UAV flights the following timelines will be used:

1. **TUAV:** 90 minutes for set-up and preparation of the TUAV for launch, upon arrival at suitable site. One hour for march order of the TUAV for movement.

2. **HUNTER:** Two hours for set-up and preparation of the HUNTER for launch, upon arrival at suitable runway. One hour for march order of the HUNTER for movement.

i. **FIGHTER MANAGEMENT:** Crew rest is an integral part of risk mitigation and accident prevention. As in manned aviation, it is a commander's policy. For appropriate guidelines see the crew endurance guide at the end of this section. The guide is per proposed AR 95-23, UAV Flight Regulations.

j. **Rotational Unit Coordination:** Planning requirements will mirror those established per support relationship in Live Unmanned Aerial Vehicle operations (para 3, below).

1. Will prepare a Collection Plan and Intelligence Synchronization Matrix that requests UAV coverage and provide that information to HICON G2 NLT 24 hours prior to mission execution.

2. Will prepare the necessary documents and conduct the required coordination to ensure Airspace Control Measures are established.

k. **Notional SUAV Procedures:** These procedures are in place for units that have SUAV trained personnel but due to the demand of SUAVs in combat theaters do not have any air vehicles on hand, or for units that come to a rotation with SUAVs but do not yet have a Certificate of Authorization from the German government to fly at Hohenfels.

1. If a unit is fielded with SUAVs, they must be on hand, be in good working order, assembled, and ready to simulate take-off and flight with all necessary equipment.

2. They can simulate launch only if they are within the SUAV's weather restrictions. If they do attempt the mission in poor weather, the OC will kill the SUAV.

3. The unit must deconflict airspace prior to SUAV flight. If not, and friendly aircraft are in the same general airspace (including another UAV), OC will safety kill the SUAV.

7-21. LIVE UNMANNED AERIAL VEHICLES (UAV):

a. **General.** During JMRC rotations, UAVs operate in a very limited airspace along with numerous helicopters. OC must ensure that UAV units and operators utilize all proper control measures in order to maintain a safe training environment.

b. **Scope.** These EXRID procedures cover the following types of UAVs during JMRC rotations: the Raven or Dragon Eye (referred to as Small UAVs (SUAV); the Shadow (BDE level UAV); and the Hunter UAV (Corps level UAV).

c**. Requirements**. All UAV Operators, and any OCs that may cover UAV operations, are required to read and comply with the JMRC EDR-137 AVN OPS REDLINE Brief (Annex B to the JMRC A2C2 SOP). Per the REDLINE Brief, all UAV operator names must be on file at Hohenfels Army Airfield (HAAF) Base Operations prior to operating any UAV within EDR-137. JMRC OCs will review the specific the rotational REDLINE information with all UAV operators as part of their rotation EXROE brief before they are allowed to conduct flight operations during that rotation.

d. **UAV Launching Procedures.**

1. A copy of the JMRC EDR-137 AVN OPS REDLINE Brief must be with the UAV operator or the UAV is not allowed to launch!

2. All UAV aircraft will keep any aircraft lighting system on full while operating at JMRC IOT aid manned aircraft in seeing and avoiding UAVs.

3. SUAVs Launch Procedures. SUAVs normally fly at 300-500 ft AGL, but may descend lower to gain greater detail of an objective. This puts it in direct competition with helicopters for airspace. It is the mission of BLUFOR Brigades and Battalions to ensure the proper A2C2 measures are in place to safely execute SUAV mission. The following JMRC EXPRO control measures are in place to make certain the airspace is truly clear before allowing a SUAV to launch.

(a). Only trained SUAV operators may control a SUAV. The BLUFOR unit must present evidence to the OC team that the SUAV operator received the proper training.

(b). There will be an OC present with any element that may launch a SUAV. OCs will not let a SUAV launch unless the unit first deconflicts the airspace with other BLUFOR units. If a unit tries to launch a SUAV without properly deconflicting the airspace, the OC will cancel the launch and declare it an OC safety kill.

(c). Prior to allowing a SUAV launch, the SUAV unit's OC will request SUAV launch permission from EXCON on OCCS OPS CMD. The request must include flight area, altitudes, and time. EXCON BTL CPT will not approve the launch unless he first receives assurance from the Falcon OC Team that the airspace is clear of any manned aircraft. If launch approval is denied by EXCON, the SUAV will cancel the launch and declare it an OC safety kill. If launch is approved, EXCON will first call HAAF Tower to inform them of the SUAV flight and then call the SUAV element's OC to allow the launch. The SUAV element's OC will make an additional OCCS point to point call to EXCON on 288 when the SUAV is actually launched.

4. TUAV: **Shadow Launch Procedures.**

(a). The Shadow unit cannot launch a UAV unless the UAV is on the ATO, and a launch and recovery ROZ is in effect. If the Shadow unit tries to launch a UAV without ensuring these procedures are in place, the OC will cancel the launch and declare it an OC safety kill.

(b). It is mandatory that Shadow UAV operators call and clear all departures and arrivals with the HAAF Tower. They will maintain radio contact with HAAF Tower any time a Shadow UAV is flying. Shadow OCs must be present with the Shadow operator prior to any Shadow launch and during all Shadow flight operations.

(c). HAAF Tower ensures that the Shadow airspace is actually clear, and announces ROZ activation times (NLT 15 minutes prior to launch or recovery). A Shadow OC will not allow a Shadow UAV to launch unless he verifies with EXCON that HAAF Tower has cleared the airspace.

(d) TUAV operational frequency must be approved and verified cleared for use prior to launch by EXCON frequency management office.

(e) Shadow OC will ensure EXCON Battle Captain notified of launch and recovery time window 30 minutes prior to facilitate HAAF Tower ROZ activation procedures (15 minutes prior to launch/recovery)

5. Hunter Launch Procedures

(a). The Hunter unit cannot launch a UAV unless the UAV is on the ATO. If launched from the STOL Strip, a launch ROZ is must be in effect. If launched from HAAF, a ROZ is not required. If the Hunter unit tries to launch a UAV without ensuring these procedures are in place, the OC will cancel the launch and declare it an OC safety kill.

(b). It is mandatory that Hunter UAV operators call and clear all departures and arrivals with the HAAF Tower. They will maintain radio contact with HAAF Tower any time a Hunter UAV is flying. Hunter OCs must be present with the Hunter operator prior to any Hunter launch and during all Hunter flight operations.

(c). HAAF Tower ensures that the Hunter airspace is actually clear. A Hunter OC will not allow a Hunter UAV to launch unless he ensures that HAAF Tower has cleared the airspace.

e. UAV Recovery Procedures

1. SUAV Recovery Procedures: The OC covering a SUAV flight will make an OCCS point to point call to EXCON on 288 when the unit has recovered the SUAV.

2. Shadow Recovery Procedures:

(a) The Shadow recovery ROZ must be in effect prior to a Shadow UAV descending from its mission altitude.

(b). Shadow UAVs must land on a prepared landing strip clear from small rocks, sticks, other objects or holes (1 inch or larger) can damage the UAV. No vehicles of any kind will be driven on a Shadow landing strip!

(c). Shadow UAV Landing strips will be considered to be "within the wire" of the nearest FOB.

3. Hunter Recovery Procedures

(a). The Hunter is utilizing the STOL strip, a recovery ROZ must be in effect prior to a Hunter UAV descending from its mission altitude.

(b). If Hunter utilizes the STOL Strip, it will be considered "within the wire" of FOB East.

f. **UAV Emergency Procedures**

1. Shadow/Hunter Operators of UAVs experiencing in-flight emergencies will report the following to HAAF Tower:

Identification/Aircraft Type	Nature of Emergency
Location	Fuel Remaining (hrs/min)
Operator's Intentions	Other Pertinent Data

2. The Shadow/Hunter OC will pass the same emergency information to EXCON on OCCS OPS CMD.

3. Because an SUAV unit does not have radio contact with HAAF Tower, their OC will assist by passing any SUAV emergency information to EXCON via OCCS point to point call to EXCON on 288, and EXCON will relay that info to HAAF Tower.

4. After recovery, HAAF Tower and EXCON must be notified with the status and location of the UAV.

5. All UAV accidents will be reported to JMRC ASO (Falcon 07S) at DSN 466-4667/2561 CIV 09472-83-4667/2651 as soon as possible.

WARNING: Any incident involving a fire or crash of a Class IV UAV (Shadow or Hunter) must be handled with extreme care. Any responding element must consider the onboard pyrotechnics as armed, active and dangerous. DO NOT ATTEMPT TO EXTINGUISH an UAV fire. All personnel must stand well clear (at least fifty meters) and up-wind of the UAV until it burns out. Evacuate areas down wind until all smoke has cleared. Control the spread of any secondary fires.

6. If any UAV, becomes uncontrollable in flight, the unit will report the situation to HAAF Tower ASAP IAW the emergency procedures above by any means possible. OCs will assist by passing the information through EXCON. HAAF Tower will inform any manned aircraft of the situation and provide instructions to avoid possible mid-air incidents.

g. **UAV Engagements and Adjudication.**

1. UAVs can only be engaged while over the competitive area of “the box”. Additionally, UAVs can only collect intelligence on terrain within the competitive area of “the Box”, and may be restricted in rotation tactical orders from conducting ISR operations before a set time for a given mission.

2 SUAVs. An SUAV in-flight is a very small target to hit. No guided system can track it and it is difficult to detect when operating above 300 feet AGL. At JMRC, SUAVs may be engaged at any time during its launch, flight or recovery phases. Probability of Hit (pH) will equal Probability of Kill (pK). If OPFOR kills a BLUFOR soldier holding an SUAV, the SUAV is considered destroyed as well.

3. Shadow/Hunter UAVs. Class IV UAVs such as Shadow and Hunter will not be engaged while within 1km of their launch or recovery sites.

4. Adjudication Procedures

(a). AD weapons location, distance to target, UAV altitude, and environmental conditions (day/night, illumination, ceiling, etc.) will all be considered when making adjudication assessments on class IV UAVs.

(b). All weapon systems used in an AD role must “see” the UAV target to get credit for acquisition. This makes night acquisition extremely difficult. UAV lighting is a mandatory requirement in a training environment and therefore makes it unrealistic to allow night detection and acquisition. For these reasons UAVs will not be engaged between sunset and sunrise. Given the small radar cross-section and radar absorbing profile of Class IV UAVs, no radar system will be allowed to track them. Class IV UAVs will emit mode 3/C transponder codes; however no radar or AD System, (ASET IV), is allowed to use this information for early warning or acquisition.

(c). An OPFOR element that engages a UAV will report the following to the RTOC who will relay the engagement data to EXCON:

(1). Time of engagement and weapon system utilized.

(2). Method of detection and engagement

(3). Weapon system location.

(4). # of rounds expended on target.

(5). Estimated UAV location, altitude and direction of flight.

(d). EXCON will contact the UAV OC and determine the following:

(1). Actual UAV location at time of engagement.

(2). Actual UAV altitude at time of engagement.

(e). If the UAV was in the general vicinity of the estimated UAV location at the time of the engagement, EXCON will utilize the following pK ratios to adjudicate the engagement, (pH will equal pK).

Weapon	Range (AGL)	
pK	Range Limitations	
ZSU 23-4	0-8200’	5%
pK is 0% above	6500’	
SA-8	4920-32,800’	
44%	Range independent	

SA-9		2592-13,776’
	60%	Range independent
SA-18		90’-14,760’
	50%	pK is 0% above 8000’

(f). For any weapons engagement other than listed above, pK will be 1% as long as it falls within the weapon’s range.

(g). EXCON will utilize a 1% pK ratio to adjudicate SUAV damage assessment from 0-250’ AGL. Above 250’ AGL pK is 0%.

5. Upon notification, the OC covering the destroyed UAV will have the UAV operator immediately stop transmitting any intel data and then recover the UAV.

6. Reconstitution. To facilitate UAV training during JMRC rotations, UAVs will be reconstituted 6 hours after proper paperwork has been submitted for a replacement UAV.

h. **Real World MEDEVAC Procedures**

1. During an actual real world MEDEVAC, the following airspace deconfliction procedures will take place:

(a). OCs covering SUAV will be notified to have any airborne SUAV immediately return to launch site and land. OC will report to EXCON when the SUAV is on the ground. They may resume the SUAV mission once the MEDEVAC aircraft has departed the Hohenfels Training Area.

(b). Any Shadow or Hunter operator will immediately command the air vehicle to climb to no lower than 4000 MSL, or higher as assigned by HAAF Tower, and hold at an ACP designated by HAAF Tower. If cloud ceilings are below 4000’ MSL the operator will command the UAV to climb to the maximum altitude afforded by the ceiling until the MEDEVAC aircraft has departed the Hohenfels Training Area.

2. Once these pre-flight requirements are made, the unit simulates launching the aircraft (This allows the OC to assess the qualifications and competence of the Soldiers involved in the SUAV mission. If Soldiers are not properly trained, the SUAV doesn’t fly or the OC kills the UAV for improper handling.

3. The OC with the SUAV unit notifies his TAF and gives the times the UAV will be in a particular NAI. The TAF then works to gather data on that area and notifies the OC on what reconnaissance information to pass to the SUAV unit. As a backup to the TAF and in Remote Training Areas, ground OC can coordinate through a Falcon OC in the air to try and provide intelligence on what the SUAV would see.